DUF_6 Depleted Uranium Hexafluoride Conversion Project	**DUF6-UDS-PLN-079** **Revision 0** **June 2007**

PADUCAH STORM WATER POLLUTION PREVENTION - BEST MANAGEMENT PRACTICES PLAN

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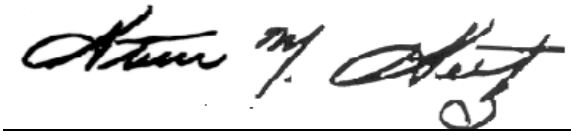

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Date: 06/8/2007

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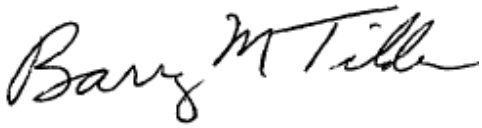

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DISCLAIMER

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PADUCAH STORM WATER POLLUTION PREVENTION - BEST MANAGEMENT PRACTICES PLAN

Revision Summary

TITLE	DOCUMENT NO.	REV.
Paducah Storm Water Pollution Prevention - Best Management Practices Plan	DUF6-UDS-PLN-079	0
REVISION DESCRIPTION Initial distribution		

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LIST OF ACRONYMS

BMPs	Best Management Practices
CWA	Clean Water Act
DOE	U.S. Department of Energy
DUF_6	Depleted uranium hexafluoride
ES&H	Environment, Safety, and Health
FWPCA	Federal Water Pollution Control Act
KPDES	Kentucky Pollutant Discharge Elimination System
PCBs	Polychlorinated biphenyls
PGDP	Paducah Gaseous Diffusion Plant
SWPP	Storm Water Pollution Prevention
UDS	Uranium Disposition Services, LLC

1 INTRODUCTION

This Storm Water Pollution Prevention - Best Management Practices Plan (SWPP) covers operations at Uranium Disposition Services, LLC's (UDS) Depleted Uranium Hexafluoride (DUF_6) Conversion Facility and associated DUF_6 cylinder storage yards. It has been developed to comply with the Federal Water Pollution Control Act (FWPCA), also known as the Clean Water Act (CWA), and the U.S. Department of Energy's (DOE's) Kentucky Pollutant Discharge Elimination System Permit KY0004049 (KPDES) wherein UDS is a named co-permittee for Outfall 17 only. This SWPP describes the facility and its operations, identifies potential sources of storm water pollution, and recommends appropriate Best Management Practices (BMPs) to reduce the discharge of pollutants in storm water runoff, and to assure meeting the effluent limitations listed for Outfall 17 in the KPDES Permit. A separate BMP Plan has been developed for other outfalls covered by the KPDES permit. References herein to any plan or procedure refer to the most recent version of the plan or procedure, in effect as of the date of this BMP Plan, or, if subsequently revised, to the revised version of such plan or procedure.

2 OBJECTIVES

The development, implementation, and maintenance of this SWPP will provide UDS with the tools to reduce pollutants contained in both storm and non-storm water discharges through:

- Identifying the sources of storm and non-storm water and their potential contaminants,
- Identifying and prescribing appropriate source area control BMPs to prevent storm water contamination from occurring, and
- Identifying and prescribing storm and non-storm water treatment BMPs to reduce pollutants prior to discharge.

To meet these objectives this SWPP includes:

- Identification of the SWPP coordinator with a description of this person's duties,
- Identification of the SWPP implementation team members,
- Descriptions of the facility and its storm water drainage and effluent discharge systems,
- Identification of potential storm water contaminants,
- Descriptions of storm and non-storm water management controls and BMPs, and
- Descriptions of the implementation schedule and provisions for review and amendment of this SWPP.

3 SWPP COORDINATOR AND IMPLEMENTATION TEAM

The SWPP coordinator for this facility is the Paducah environmental, safety, and health (ES&H) site lead. His duties include:

- Creating an SWPP implementation team,
- Implementing this SWPP,
- Overseeing the BMPs identified in this SWPP,
- Implementing and overseeing any needed employee training,
- Conducting or providing for inspection of monitoring activities,
- Identifying other potential pollutant sources and assuring they are added to this SWPP,
- Identifying any deficiencies in this SWPP and assuring they are corrected,
- Preparing and submitting any required reports, and

- Ensuring that any changes in facility operations are reflected in this SWPP.
- Assisting the SWPP coordinator in the above tasks is the Paducah Cylinder Yard Management, Scheduling, and Logistics Manager.

4 FACILITY DESCRIPTION

UDS maintains approximately 40 acres of the Department of Energy's (DOE's) Paducah Gaseous Diffusion Plant (PGDP), which houses the DUF_6 Conversion Facility and the C-745 Cylinder Yards. The PGDP is located in a generally rural area of McCracken County, Kentucky and includes 3556 acres. Its center is approximately 10 miles west of Paducah, Kentucky and 3 miles south of the Ohio River. The industrial portion of the PGDP, about 748 acres, is situated within a fenced security area.

The DUF_6 Conversion Facility Site, hereinafter referred to as Site, is located inside the PGDP site security entrance checkpoint and outside the inner security fence of the PGDP on the south side adjacent to and west of the depleted uranium hexafluoride (DUF_6) Cylinder Yards. Figure 1 depicts the Site and associated C-745 Cylinder Yards that UDS manages for DOE. The Site is bounded on the north by a fence and the C-810 Parking lot; on the east by a fence, Patrol Road 5, and the C-745 Cylinder Yards; on the south by a 161-kVA power line and right-of-way that is maintained by the responsible utility; and on the west by the main entrance roadway. Hobbs Road Patrol Road 4 divides the Site into northern and southern legs. The northern section (approximately 24 acres) of this site is flat and covered with grasses over most of its extent; a ditch line midway along the northern section of the site discharges surface water to the west via KPDES Outfall 17.

Approximately 16 acres of the allocated Site, the southern portion, is relatively undisturbed and primarily supports a mature deciduous hardwood forest community of approximately 10 acres. The southern portion of the Site is bordered to the east by Cylinder Yard C-745-T, to the west by the entrance highway, to the north by Montana Avenue, and to the south by a high-voltage power line easement.

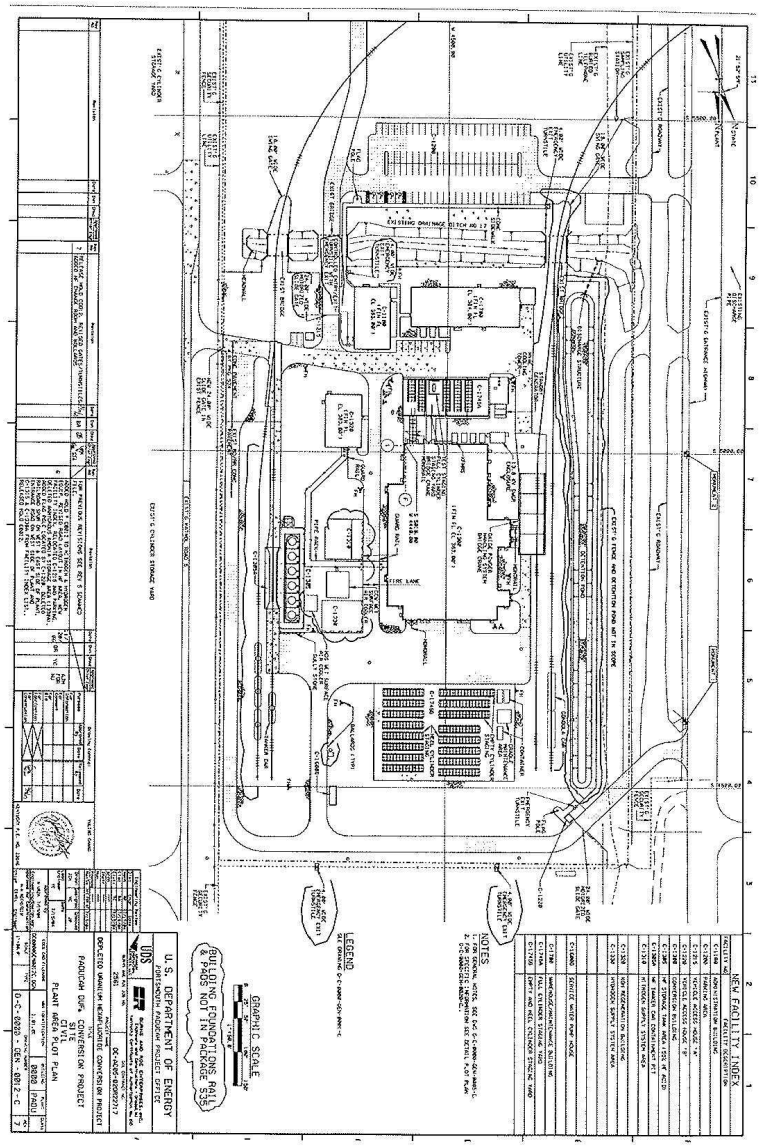

Figure 1 - DUF_6 Conversion Facility and Associated Cylinder Yards

5 SITE STORM WATER DISCHARGE

There are three primary pathways for discharge of storm water from the Site and cylinder yards. Storm water from the cylinder yards flows overland directly into Ditch 17 for discharge at Outfall 17. Storm water from the northern section of the Site is directed to the detention pond on the western edge of the Site via a series of drains and underground conduits prior to its release to Ditch 17 and discharge at Outfall 17. Storm water in the Site's southern section is transported in two swales, approximately 400 and 460 feet south of Ditch 17, for discharge on the east side of the main entrance roadway, and, except under extreme rain storm conditions this pathway is, at best, a minor contributor to the storm water discharge near Outfall 17. As such, nearly all storm water runoff that is discharged at or near Outfall 17 first enters and then traverses Ditch 17, goes through conduit under the main entrance roadway, and is then discharged at Outfall 17.

6 IDENTIFICATION OF STORM WATER POLLUTANTS

Pollutants of concern, i.e., those pollutants that have the potential to be present in storm water runoff, at the Site and its associated cylinder yards are polychlorinated biphenyls (PCBs), suspended solids, and zinc.

PCBs and/or zinc are present in the paint on a relatively small number of cylinders stored in the cylinder yards (hereafter "affected cylinders"). Zinc is also present in the galvanized fencing surrounding the Site's detention pond, and some of the fencing around the cylinder yards.

Suspended solids that could be present in the discharge at Outfall 17 would be the result of erosion of the ground surface in the graveled portions of the cylinder yards and the unpaved portions of the Site.

7 SUMMARY OF PREVIOUS MONITORING DATA

Discharge monitoring at Outfall 17 has been continuing since late 1998 under DOE's KPDES Permit KY0004049. These data indicate that the zinc levels at Outfall 17 have been slowly decreasing through time. This is most probably due to continuously decreasing zinc levels in the paint on the cylinders resulting from ongoing leaching. All results for suspended solids met the applicable effluent limit and water quality criteria. Additionally, these data noted occasional failures for Acute Toxicity testing of minnows and daphnids, and occasional detectable levels of PCBs.

8 STORM WATER CONTROLS

The storm water controls, BMPs, identified for implementation at the DUF_6 Conversion Facility Site and associated cylinder yards that UDS manages for DOE, can be classified into source controls, operational controls, and engineered controls. Several of the controls described in the following sub-sections are mandatory and so noted; while others will be implemented as appropriate to assure that storm water discharges to Outfall 17 meet the requirements of KPDES Permit KY0004049.

8.1 SOURCE CONTROLS

Source controls generally consist of good housekeeping and maintenance of Site and cylinder yard cleanliness. The following mandatory BMPs, which serve to prevent storm water contamination, will be implemented:

- Periodic visual walkdowns (at least every four years) of affected cylinders, and clean-up and proper disposal of visible paint chips on the ground that may be encountered during such walkdowns.

- Ongoing visual observation of the fencing and its galvanized coating around the cylinder yards and detention pond with repair and replacement as deemed appropriate by the SWPP Coordinator.

- Clean-up and proper disposal of visible paint chips that are removed incidental to cylinder scraping for removal of rust, scale, and corrosion products.

- Clean-up and proper disposal of visible paint chips from the ground and cylinder haulers resulting from the transport of the affected cylinders.

Although not a part of this SWPP, additional information on cylinder and cylinder yard maintenance and movement of cylinders is found in UDS's *Cylinder Surveillance and Maintenance Plan* (DUF6-UDS-PLN-011) and *Handling, Transportation, and Inspection of 48-Inch Diameter UF_6 Cylinders at Paducah* (UDS-C-CYP-2400).

8.2 OPERATIONAL CONTROLS

Operational controls consist of those continuing activities to prevent, mitigate, or treat storm water contamination. The following mandatory BMPs will be implemented:

- Unpaved areas of the Site, to the extent practical, shall be maintained with an appropriate vegetative cover, or covered with rock, or other suitable materials, to prevent soil erosion.
- The vegetation in Ditch 17, to the extent practical, shall be maintained in its natural state.
- The vegetation associated with the other ditches identified on the Site, to the extent practical, shall be maintained in their natural states.
- Site storm water drains and conduits shall be inspected periodically and cleaned as required to assure adequate flow into the detention pond.
- The detention pond, standpipe, weir, and discharge pipe shall be inspected periodically and cleaned/dredged/repaired as required to maintain the pond's capacity and outflow characteristics.
- The use of herbicides, pesticides, and fertilizers shall be on an as needed basis and carefully controlled to avoid over-application and entry into the Site's detention pond and Ditch 17.
- The following BMPs will be implemented as and if needed as determined by the SWPP Coordinator to minimize TSS at the outfall:
- Flocculation of the water in the detention pond to settle suspended solids.
- Filtering the outflow from the detention pond prior to its entering Ditch 17 to lower its suspended solids and particulate content.
- Temporarily halting the discharge from the detention pond to Ditch 17.

8.3 ENGINEERED CONTROLS

The engineered BMPs described below will be implemented in a graded approach if and as required, as determined by the SWPP Coordinator, based on the discharge monitoring results required by KPDES Permit KY0004049 for Outfall 17.

Emplacement and maintenance of limestone rock in a portion of Ditch 17, which will serve to raise the effluent's hardness, and consequently lower its toxicity to minnows and daphnids. Additionally, it will act as a rock dam to trap sediments and particulates.

Emplacement and maintenance of hay bales, silt fences, rock dams, and/or other suitable controls in portions of Ditch 17 to trap and retain sediments and particulates.

9 SPILL PREVENTION AND CONTROL

In addition to the sources and pollutants of concern that may be found in storm water described in this SWPP, there are other materials used, stored, or produced at the DUF_6 Conversion Facility that, if spilled or released, could contaminate storm water. These materials include, for example, oil, diesel fuel, hydrofluoric and sulfuric acids, calcium and potassium hydroxide, and various water treatment chemicals. The pollution prevention and contingency response program for these materials is discussed in UDS's *Paducah DUF6 Conversion Facility SPCC, RCRA Contingency, and PPC Plan* (DUF6-UDS-PLN-081).

10 EMPLOYEE TRAINING

Employee training to inform appropriate personnel of the components, goals, and requirements of this SWPP will be accomplished as follows:

Employees directly involved with the implementation of this SWPP, and those employees whose responsibilities may interface with this SWPP, will be required to read and signify their understanding of its goals and components.

Employees that have specific tasks associated with this SWPP, e.g., installation and maintenance of storm water controls, will receive on-the-job-training such that they can execute their tasks safely and effectively.

11 IMPLEMENTATION SCHEDULE

The implementation schedule for the action items described in this SWPP is shown in the table below.

SWPP Action Item	Implementation
Employee training	Ongoing
Affected cylinder visual inspections	Ongoing
Fencing visual inspections	Ongoing
Maintenance of site and wetland vegetation	As required
Inspect and clean storm water system and detention pond	As required
Floc, filter, and/or discontinue discharge from the detention pond	As required
Place limestone and/or storm water controls in Ditch 17	As required

12 REFERENCES

Kentucky Department of Environmental Protection, KPDES Permit KY0004049,

Paducah DUF_6 Conversion Facility SPCC, RCRA Contingency, and PPC Plan, DUF6-UDS-PLN-081

Cylinder Surveillance and Maintenance Plan, DUF6-UDS-PLN-011

Handling, Transportation, and Inspection of 48-Inch Diameter UF_6 Cylinders at Paducah, UDS-C-CYP-2400